In the Claims

1. (Original) A computerized system for determining whether a database contains an image substantially matching that of a given probe candidate, the system comprising:

an input device constructed and arranged to receive first and second biometric search templates associated with the probe candidate, the first biometric search template associated with a first type of biometric identifier and the second biometric search template associated with a second type of biometric identifier;

a first database comprising a plurality of searchable biometric templates, the plurality of searchable biometric templates comprising a plurality of templates of the first type of biometric and a plurality of templates of the second type of biometric;

a first biometric search engine operably coupled to the input device and to the database, the first biometric search engine adapted to search the database of searchable biometric templates for a match to the first biometric template and return a first set of results;

a second biometric search engine operably coupled to the input device and to the database, the second biometric search engine adapted to search the database of searchable biometric templates for a match to the second biometric template and return a second set of results;

a processor in operable communication with the input device and the first and second biometric search engines, the processor programmed to compare the first and second sets of results to the first and second biometric templates to determine whether any result in the first set of results or the second set of results is a substantial match to either the first or second biometric search templates associated with the probe candidate.

2. (Original) The system of claim 1, wherein each of the plurality of biometric templates in the first database comprise third and fourth templates, the third template being the first type of biometric and the fourth template being the second type of biometric, such that any result returned by either the first or the second biometric search engine will comprise both a third biometric template and a fourth biometric template.

3. (Original) The system of claim 2, , wherein the processor is programmed to:

receive the first set of results from the first biometric search engine; and

direct the second biometric search engine to search the first set of results using the second biometric template.

4. (Original) The system of claim 1 wherein the first and second types of biometric are each selected from the group consisting of face, fingerprint, thumbprint, hand print, iris, retina, hand geometry, finger geometry, thermogram, signature, voice, keystroke dynamic, odor, breath, and DNA.

5. (Original) The system of claim 1 wherein the first type of biometric is different than the second type of biometric.

6. (Original) The system of claim 1 wherein the first type of biometric is face and the second type of biometric is at least one of fingerprint, thumbprint, and iris.

7. (Original) The system of claim 1 further comprising a capture subsystem in operable communication with the input device, the capture subsystem constructed and arranged to capture raw biometric data used to create the first and second biometric templates.

8. (Original) The system of claim 1 wherein the capture subsystem is constructed and arranged to automatically locate raw biometric data in a digitized image.

9. (Original) The system of claim 7 wherein the processor is programmed to convert the raw biometric data to first and second biometric templates.

10. (Original) The system of claim 1 further comprising a second database in operable communication with the processor, the second database storing matches determined by the processor.

11. (Original) The system of claim 1 wherein the system is part of a system for creating identification documents and the processor is programmed to determine whether or not an identification document will be created based at least in part on the first and second results.

12. (Original) The system of claim 11 wherein the identification documents are at least one of drivers licenses, voter identification documents, national identification documents, passports, Visa documents, credit cards, and government-issued identification documents.

13. (Currently amended) The system of claim 1 wherein the probe image comprises at least one of a photograph, digital image, sketch, mug shot, ~~mugs hot~~, painting, illustration, and cartoon.

14. (Original) A computer-implemented method for determining whether a database contains any images that substantially match at least one image provided of an individual, comprising:

receiving a probe data set, the probe data set comprising first and second biometric templates associated with the individual, the first biometric template associated with a different type of biometric than the second type of biometric template;

searching a database of biometric templates using the first biometric template to retrieve a first results set;

selecting a first predetermined portion of the first results set;

searching the first predetermined portion of the first results set using the second biometric template to retrieve a second results set;

selecting a second predetermined portion of the second results set; and

providing the second predetermined portion of the second results for comparison with the image provided of the individual.

15. (Original) The method of claim 14, wherein at least one of the first and second results sets is ranked in accordance with closeness of match to the first biometric template.

16. (Original) The method of claim 14 wherein the first type of biometric is facial recognition and the second type of biometric is fingerprint.

17. (Original) A computer-implemented method for determining whether a database contains any images that substantially match an image associated with an individual, comprising:

(a) receiving an initial probe data set, the initial probe data set comprising a biometric template associated with the individual;

(b) searching a database of biometric templates using the initial probe data set to

retrieve a results set, the results set comprising biometric templates that satisfy a predetermined first criteria;

(c) selecting a first predetermined portion of the results set to be a refined probe data set;

(d) searching the database of biometric templates using the refined probe data set to return a results set, the results set comprising biometric templates that satisfy the predetermined first criteria;

(e) repeating (c) and (d) until a stop condition is reached; and

(f) returning the last results set retrieved before the stop condition is reached as a final results set.

18. (Original) The method of claim 17, wherein the stop condition comprises at least one of:

the results set containing no biometric templates;

the results set containing only biometric templates that have been retrieved in at least one previous results set;

a substantial portion of the results set comprises biometric templates that have been retrieved in at least one previous results set;

steps (c) and (d) have been repeated a predetermined number of times; and

an instruction has been received to stop searching.

19. (Original) The method of claim 1 wherein the predetermined first criteria comprises a result in the set having a biometric template that matches the biometric template of the probe data set to a predetermined degree.

20. (Original) The method of claim 17 wherein at least one of the initial probe data set and the results set further comprises a data record of additional data associated with each individual in the respective set, the additional data comprising at least one of biometric data, demographic data, variable data, data specific to an identification document associated with the individual, data indicating whether the data record has been previously associated with fraud, data indicating whether the data record has been previously notated.

21. (Original) The method of claim 20 further comprising:

(g) determining, for each member of the results set, whether any of the additional data associated with that respective member of the results set is a substantial match to any of the additional data in the initial probe data set.

22. (Original) The method of claim 17, further comprising:

(g) determining whether any result in the results set is substantially similar to one or more other results in the results set;

(h) selecting the results in the results set that are substantially similar to each other to be a refined probe data set;

(i) searching the database of biometric templates using the refined probe data set to return a results set, the results set comprising biometric templates that satisfy a predetermined fourth criteria;

(j) repeating (g) through (i) until a stop condition is reached; and

(k) returning the last results set retrieved before the stop condition is reached as a final results set for further investigation, the final results set comprising information about records in the database containing information that is substantially similar to information contained in other records in the database but which is not necessarily similar to information associated with the individual.

23. (Original) The method of claim 17, wherein the method is used for at least one of fraud investigations, criminal investigations, identification document issuance, identification document manufacture, addition of images to a computerized database, computerized dating, and computerized matchmaking.

24. (Original) A computer-implemented method for determining whether a database contains any images that substantially match those of an individual, comprising:

(a) receiving an initial probe data set, the first probe data set comprising first and second biometric templates associated with the individual;

(b) searching a database of biometric templates using the first biometric template to retrieve a first results set, the first results set comprising a data set for each individual who has a biometric template that satisfies a predetermined first criteria, the data set comprising

biometric template information that is searchable using the second biometric template;

(c) selecting a first predetermined portion of the first results set;

(d) searching the first predetermined portion of the first results set using the second biometric template to retrieve a second results set, the second results set comprising a data set for each individual who has a biometric template that satisfies a predetermined second criteria, the data set comprising biometric template information that is searchable using the first and second biometric templates;

(e) selecting a first predetermined portion of the results set to be a refined probe data set;

(f) searching the database of biometric templates using the refined probe data set to return a results set, the results set comprising biometric templates that satisfy a predetermined third criteria;

(g) repeating (e) and (f) until a stop condition is reached; and

(h) returning the last results set retrieved before the stop condition is reached as a final results set.

25. (Original) The method of claim 24, wherein the stop condition comprises at least one of:

the results set containing no biometric templates;

the results set contains only biometric templates that have been retrieved in at least one previous results set;

a substantial portion of the results set comprises biometric templates that have been retrieved in at least one previous results set;

steps (e) and (f) have been repeated a predetermined number of times; and

an instruction has been received to stop searching.

26. (Original) A computer-implemented method for determining whether a database contains any images that substantially match an image associated with an individual, comprising:

(a) receiving an initial probe data set, the first probe data set comprising at least one of a biometric template associated with the individual and non-biometric data associated with the individual;

(b) searching a database of biometric templates using the initial probe data set retrieve

a results set, the results set comprising biometric templates that satisfy a predetermined first criteria;

(c) selecting a first predetermined portion of the results set to be a refined probe data set;

(d) searching the database of biometric templates using the refined probe data set to return a results set, the results set comprising biometric templates that satisfy the predetermined first criteria;

(e) repeating (c) and (d) until a stop condition is reached; and

(f) returning the last results set retrieved before the stop condition is reached as a final results set.

27. (Original) A method for locating images in a database, comprising:

receiving a first probe set, the first probe set comprising a non-biometric data record;

searching a database of data records for data records that substantially match the non-biometric data record, the database of data records including, for each data record in the database, at least one biometric template associated with at least one image;

receiving a first results set from the search of the database, the results set comprising, for each substantial match to the non-biometric data record, a results set data record comprising a corresponding image and biometric template;

selecting at least one results set data record to use as a second probe set; and

searching the database of data records for data records having biometric templates that substantially match the biometric record associated with the results set data record.

28. (Original) A method for determining whether an individual should receive an identification document, comprising:

receiving a probe set associated with the individual, the probe set comprising a first biometric template of a first type and a second biometric template of a second type;

performing a first search, the first search comprising searching a database of previously enrolled biometric templates for a biometric template that substantially matches the biometric template of the first type;

performing a second search, the second search comprising searching the database of

previously enrolled biometric templates for a biometric template that substantially matches the biometric template of the second type; and

analyzing the results of the first and second searches to determine whether any resulting matches indicate that the individual either is attempting to fraudulently obtain an identification document or has attempted to fraudulently obtain an identification document in the past.

29. (Original) The method of claim 28, further comprising denying the individual an identification document if, after analysis, matches are found during either the first search or the second search.

30. (Original) The method of claim 28 further comprising capturing first and second images of the individual, the first image capable of being converted into the first biometric template of a first type, the second image capable of being converted into the second biometric template of a second type.

31. (Original) The method of claim 28 wherein the first type of biometric is different than the second type of biometric.